

**Remarks**

Reconsideration of the application is respectfully requested in view of the foregoing amendments and following remarks. Claims 1-4, 35-41, 44 and 46-53 are pending in the application. Claims 5, 42, 43 and 45 are canceled without prejudice. Claims 47-53 are new. No claims have been allowed. Claims 1, 40 and 51 are independent.

***Response to § 101 Rejections***

In the Action, the Examiner rejected pending claims 1-4, 35-41, 44 and 46 under 35 U.S.C. 101 as being directed to non-statutory subject matter. Applicants respectfully disagree with the Examiner's rejection. However, to expedite prosecution, independent claims 1 and 40 have been amended. Claims 2-4 and 35-39 depend directly or indirectly from claim 1, and claims 41, 44 and 46 depend directly or indirectly from claim 40.

As amended, claim 1 recites a "receiving" step, a "converting" step, and an "outputting" step, and claim 40 recites "means for receiving," "means for converting" and "means for outputting." Further, the preamble of claim 1 recites in part, "converting video data for a video image to a lower-precision representation for lower-precision processing of the video data . . ." These amendments are supported in the specification and do not introduce new matter.

The claims in their present form have at least one "practical application" and at least one "useful, concrete and tangible result." [See MPEP § 2106.] Accordingly, the rejection of the claims under 35 U.S.C. § 101 should be withdrawn. Such action is respectfully requested.

***Response to § 103(a) Rejections***

In the Action, the Office rejects pending claims 1-4, 35-41, 44 and 46 under 35 U.S.C. § 103(a). Applicants respectfully traverse these rejections and submit that the claims in their present form are allowable over the applied art, as explained in detail below.

**A. Response to Rejection of Claims 1-3, 35, 39-41 and 46**

In the Action, the Office rejects pending claims 1-3, 35, 39-41 and 46 under § 103(a) over U.S. Patent Application Publication No. 2004/0190771 ("Eid") in view of U.S. Patent

Application Publication No. 2001/0025292 (“Denk”) and Motorola, Inc., *M68000 8-/16-/32-Bit Microprocessors Programmer’s Reference Manual*, p. B-35 (5th ed. 1986) (“Motorola”).

Although Motorola describes clearing a “destination” to zero [see Motorola at p. B-35 (“Description”)], a combination of Motorola with Eid and Denk would actually lead to *clearing memory* of data described in Eid and Denk, rather than converting data to a lower-precision representation. Therefore, the combination of Eid, Denk and Motorola does not teach or suggest, and actually leads directly away from “converting the n-bit representation to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged,” as recited in independent claims 1 and 40.

Amended independent claim 1 recites in part:

receiving chroma and luma information for a pixel in the video image in an n-bit representation, the n-bit representation comprising a 16-bit fixed-point block of data per channel for the pixel, where the most significant byte in the 16-bit unit of data is an integer component, and where the least significant byte in the 16-bit unit of data is a fractional component,

converting the n-bit representation to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged . . . .

Amended independent claim 40 recites in part:

means for receiving chroma and luma information for at least one pixel in a video image, the chroma and luma information in an n-bit representation, the n-bit representation comprising a 16-bit fixed-point block of data per channel for the pixel, where the most significant byte in the 16-bit unit of data is an integer component, and where the least significant byte in the 16-bit unit of data is a fractional component,

means for converting the n-bit representation to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged . . . .

Motorola describes an operation named “0 → Destination” in which “[t]he destination is cleared to all zero.” [See Motorola at p. B-35 (“Description”).] The instruction format for the “0 → Destination” operation includes an “Effective Address” field that “[s]pecifies the destination location” in memory and a “Size” field that “[s]pecifies the size of the operation” to clear memory of size byte, word, or long. [See *id.* (“Instruction Format” and “Instruction Fields”)]

The Action states at pages 8-9,

The combination of Eid and Denk discloses shifting and rounding operations, but they do not explicitly teach to assign zero values to one or more least significant bits in the fractional component while the integer component is unchanged. However, Motorola's M68000 Programmer's Reference Manual teaches to use CLR command to clear the destination to all zero (page B-35; using CLR command, the least significant byte of the higher precision representation could be assigned zero values and converted to the lower precision representation). . . .

Applicants respectfully disagree that the combination of Eid, Denk and Motorola teaches or suggests "to assign zero values to one or more least significant bits in the fractional component" as stated by the Examiner. The "CLR" operation in Motorola does not teach or suggest converting an n-bit representation to a lower-precision representation by assigning zero values. In fact, page B-35 of Motorola teaches directly away from reducing precision of data because a memory location specified in the instruction is *completely cleared to zero*, effectively erasing whatever data was there. [See Motorola at p. B-35.]

Clearing a memory location to zero as described by Motorola does not convert anything to a lower-precision representation. Furthermore, the description of the "0 → Destination" operation does not describe a fraction or integer component, and Motorola does not assign zero values to least-significant bits in a fractional component of a destination or any other data. [See *id.*]

Claims 1 and 40 are allowable. Claims 2, 3, 35 and 39 depend from claim 1 and are allowable for at least the reasons given above in support of claim 1. Claims 41 and 46 depend from claim 40 and are allowable for at least the reasons given above in support of claim 40. Therefore, the rejection of claims 1-3, 35, 39-41 and 46 under 35 U.S.C. § 103(a) over Eid in view of Denk and Motorola should be withdrawn. Such action is respectfully requested.

The rejections of dependent claims 4, 36-38 and 44 are addressed below.

#### **B. Response to Rejection of Claim 4**

In the Action, the Office rejects claim 4 under § 103(a) over Eid in view of Denk, Motorola and U.S. Patent Application Publication No. 2004/0183949 ("Lundberg").

The applied art does not teach or suggest each and every element of dependent claim 4. Lundberg describes "the colour information in each picture is sampled at lower spatial resolution than the luminance." [See Lundberg at ¶ 0073.] However, the applied art does not teach or

suggest the recited language of independent claim 1, from which claim 4 depends. For example, Lundberg does not teach or suggest “the n-bit representation is convertible to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged,” as recited in independent claim 1.

Because the applied art does not teach or suggest at least one element of independent claim 1, claim 4 is allowable for at least the reasons given above for the allowability of its parent claim. Therefore, the rejection of claim 4 under 35 U.S.C. § 103(a) over Eid in view of Denk, Motorola and Lundberg should be withdrawn. Such action is respectfully requested.

**C. Response to Rejection of Claims 38 and 44**

In the Action, the Office rejects claims 38 and 44 under § 103(a) over Eid in view of Denk, Motorola and “FOURCC.org – YUV pixel formats,” <http://www.fourcc.org/yuv.php>, pp. 1-15 (“the FOURCC.org YUV pixel formats document”).

The applied art does not teach or suggest each and every element of dependent claims 38 and 44. The FOURCC.org YUV pixel formats document describes packed YUV formats with different numbers of bits per pixel, but the applied art does not teach or suggest the recited language of independent claims 1, from which claim 38 depends, or independent claim 40, from which claim 44 depends. For example, the FOURCC.org YUV pixel formats document does not teach or suggest “converting the n-bit representation to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged,” as recited in independent claims 1 and 40. In addition, the web page at <http://www.fourcc.org/yuv.php> cited by Applicants in the IDS filed on March 10, 2004, indicates a “last modified” date of February 7, 2004. Applicants do not admit that this document is prior art to the present application and reserve the right to provide evidence of prior conception.

Claims 38 and 44 are allowable for at least the reasons given above for the allowability of their respective parent claims. Therefore, the rejection of claims 38 and 44 under 35 U.S.C. § 103(a) over Eid in view of Denk, Motorola and the FOURCC.org YUV pixel formats document should be withdrawn. Such action is respectfully requested.

**D. Response to Rejection of Claims 36 and 37**

In the Action, the Office rejects claims 36 and 37 under § 103(a) over Eid in view of Denk, Motorola and U.S. Patent Application Publication No. 2003/0202589 (“Reitmeier”).

The applied art does not teach or suggest each and every element of dependent claims 36 and 37. Reitmeier describes a “10-bit video signal is coupled to a video processor (not shown) for further processing.” [See Reitmeier at ¶ 0033.] However, the applied art does not teach or suggest the recited language of independent claim 1, from which claims 36 and 37 depend. For example, Reitmeier does not teach or suggest “converting the n-bit representation to a lower-precision representation by assigning zero values to one or more least significant bits in the fractional component while the integer component is unchanged,” as recited in independent claim 1.

Claims 36 and 37 are allowable for at least the reasons given above for the allowability of their respective parent claims. Therefore, the rejection of claims 36 and 37 under 35 U.S.C. § 103(a) over Eid in view of Denk, Motorola and Reitmeier should be withdrawn. Such action is respectfully requested.

***New Claims***

Claims 47-53 have been added. Claims 47 and 48 depend from claim 40 and are allowable for at least the reasons given above in support of claim 40. Claims 49 and 50 depend from claim 1 and are allowable for at least the reasons given above in support of claim 1. New independent claim 51 is a computer-readable media claim that shares language in common with amended independent claim 1. Claims 52 and 53 depend from new claim 51. Support for new claims 47, 49 and 53 can be found, for example, in the Application at page 15. Support for new claims 48 and 50 can be found, for example, in the Application at pages 14-15. Support for new claims 51 and 52 can be found, for example, in the Application at pages 14-15 and original claims 1 and 2.

***Request For Interview***

If any issues remain, the Examiner is formally requested to contact the undersigned attorney prior to issuance of the next Office Action in order to arrange a telephonic interview. It is believed that a brief discussion of the merits of the present application may expedite

prosecution. Applicants submit the foregoing formal Amendment so that the Examiner may fully evaluate Applicants' position, thereby enabling the interview to be more focused.

This request is being submitted under MPEP § 713.01, which indicates that an interview may be arranged in advance by a written request.

*Conclusion*

The claims in their present form should now be allowable. Such action is respectfully requested.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600  
121 S.W. Salmon Street  
Portland, Oregon 97204  
Telephone: (503) 595-5300  
Facsimile: (503) 595-5301

By



Stephen A. Wight  
Registration No. 37,759